GUESSS

Global University Entrepreneurial Spirit Students' Survey

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National Report for The Netherlands 2023

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About the Entrepreneurship and Technology Management (ETM) section at the University Twente

The ETM section of the Faculty of Behavioural, Management, and Social Sciences at the University of Twente aims to achieve societal impact by facilitating the entrepreneurial journey - *from idea to end-user* - through education, research and outreach activities. At a people-first university of technology, we are uniquely positioned to achieve this mission. In all our activities, we aim to combine a rigorous scientific approach with clear relevance for practice, which can be characterised as engaged scholarship and interdisciplinary challenge-based learning. Together with our partners, we play a vital role in the University of Twente entrepreneurial ecosystem, the 4TU/ECIU network, the EUREGIO and the Dutch higher education landscape. For more information about ETM, please visit https://www.utwente.nl/en/bms/etm/.

Acknowledgments

We would like to thank all colleagues and higher education representatives for their invaluable assistance and support in organizing the data collection. We are especially grateful to the students who participated in the survey and took the time to complete the questionnaire. Special thanks go to our partners from 4TU Entrepreneurship Education Research: Lisa Ploum and Yvette Baggen from Wageningen University, Isabelle Reymen and Madis Talmar from Utrecht University, and Victor Scholten and Frido Smulders from Delft University. We would also like to thank Thomas Lans and Franceina van Zalk (HAN University of Applied Sciences), as well as Adrienn Erös and Lisanne Bouten (Saxion University of Applied Sciences) for their exceptional contributions. Finally, GUESSS is supported by EY as the global project partner.

Cover foto

Scene from “Create Tomorrow 2023” at the University of Twente
Source: Beeldbank University of Twente

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Preface

Within the context of higher education, students are increasingly exploring entrepreneurial ventures as viable career paths, driven by a desire for independence, creativity, and impact. Universities play a crucial role in nurturing this entrepreneurial potential by providing resources, education, and support systems tailored to the needs of aspiring entrepreneurs. The entrepreneurial activities of students not only contribute to their personal and professional development but also foster economic growth and innovation within the broader society.

The Global University Entrepreneurial Spirit Students' Survey (GUESSS) is an international research project that investigates and compares student entrepreneurship. In its 10th edition, GUESSS surveyed 226,718 university students in 57 countries and is a primary source of information on student entrepreneurship worldwide.

This report presents the results of the data collection conducted in 2023 in the Netherlands. The sample consists of 811 students enrolled in 18 different Dutch universities. The report is prepared by members of the Entrepreneurship and Technology Management (ETM) section at the University of Twente.

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GUESSS NL '23 Partners

International Project Partner

Executive Summary

This section provides an overview of insights and results regarding the Dutch sample of the 2023 edition of the GUESSS survey.

Sample description:

- The average age of the students surveyed in this report is 21.5 years.
- Male students represent 64.3% of the sample, female students comprise 34.8%, and 0.9% identify as “Other”.
- 70.4% of the respondents are Dutch, while 29.6% are international students.
- Business/Management is the most popular field among respondents (49.8%), followed by Economics (27.5%). Other fields such as Natural Sciences (5.8%), Engineering (4.3%), and Social Sciences (2.9%) are less represented.
- 78.5% of the participants are studying at Bachelor’s, 20.3% at Master’s level and 1.2% at other levels (e.g., MBA).

Career choice intentions and entrepreneurial intentions in the university context:

- Immediately after graduation, 50.8% of students plan to become employees, which decreases to 36.3% after five years. Conversely, the intention to become founders increases significantly from 22.8% immediately after graduation to 39.8% five years later.
- 54.5% of students have attended at least one entrepreneurship course. Male students (59.7%) are more likely to engage in entrepreneurship education than female students (45%).
- 66.5% of students who intend to start a business immediately after graduation and 63.8% of those planning to start a business five years later have attended entrepreneurship courses.
- Participation in entrepreneurship courses is highest among students in Computer Sciences/IT (93.8%), Engineering (80%), and Business/Management (73.4%). Fields like Social Sciences (26.1%), Economics (18.5%), and Natural Sciences (17.0%) have the lowest participation rates.

Students’ entrepreneurial activities in planning and action:

- 25.2% of students in the sample are in the process of founding their business, defined as nascent entrepreneurs.
- Male students (30.5%) are more likely to be nascent entrepreneurs compared to female students (15.5%).
- Over half (54.9%) of nascent entrepreneurs want their business to become their main occupation after graduation. A smaller group (16.7%) does not see their business as their primary future career direction, while 28.4% are unsure.
- 16.3% of the respondents are active entrepreneurs, already running their own businesses or being self-employed.
- Among male students, 20.2% are active entrepreneurs compared to 9.0% of female students.
- 28.7% of the active entrepreneurs wish for their entrepreneurial endeavors to become their primary career path post-graduation, 37.2% of active student entrepreneurs do not plan to continue with their business, and 34.1% of active entrepreneurs remain unsure about the future.

Table of Contents

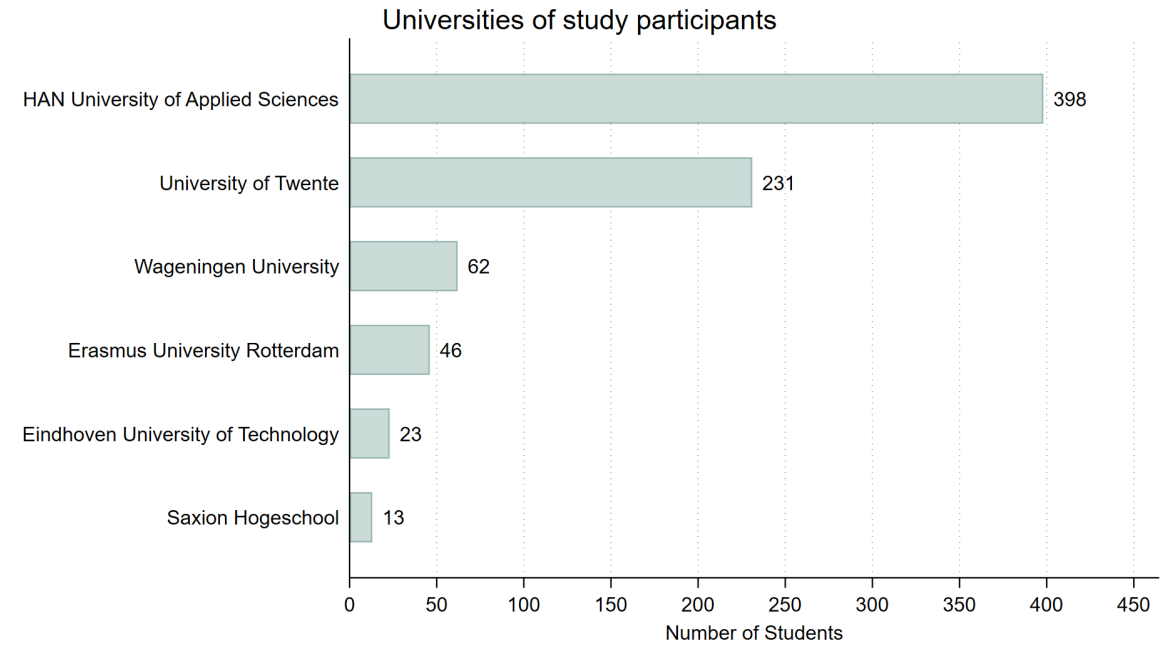
List of Figures

1. Sample description

1.1. Universities of study participants

Figure 1 illustrates the distribution of study participants across Dutch universities. 398 respondents study at HAN University of Applied Sciences, accounting for 49.1% of the total sample, followed by the University of Twente with 231 respondents (28.5%). Wageningen University and Erasmus University Rotterdam contribute 62 (7.6%) and 46 (5.7%) respondents, respectively. Eindhoven University of Technology has 23 respondents (2.8%), and Saxion Hogeschool has 13 respondents (1.6%).

Additionally, several universities have fewer than ten respondents and are not shown in Figure 1. Universities with 8 to 9 respondents include the University of Amsterdam (9 respondents), Amsterdam University of Applied Science (8 respondents), and Delft University of Technology (8 respondents). Universities with 2 respondents are INHolland University of Applied Science, Tilburg University, University of Groningen, and VU University Amsterdam. Finally, universities with only 1 respondent include Fontys University of Applied Sciences, Haagse Hotelschool, Leiden University, Open Universiteit, and Rotterdam University of Applied Science.



Note: Only universities with ten or more respondents are shown.

Figure 1: Universities represented in the GUESSS Netherlands 2023 survey (n = 811).

1.2. Demographic characteristics

The age distribution of students participating in the Dutch GUESSS 2023 survey is predominantly in the younger age brackets (see Figure 2). The largest group is students aged 20-29 years, comprising 64.4% of the respondents. This is followed by those under 20 years, representing 31.1%. Students in the 30-39 years age group make up 2.9%, while those in the 40-49 years and 50 years and over groups constitute 1.3% and 0.4% respectively.

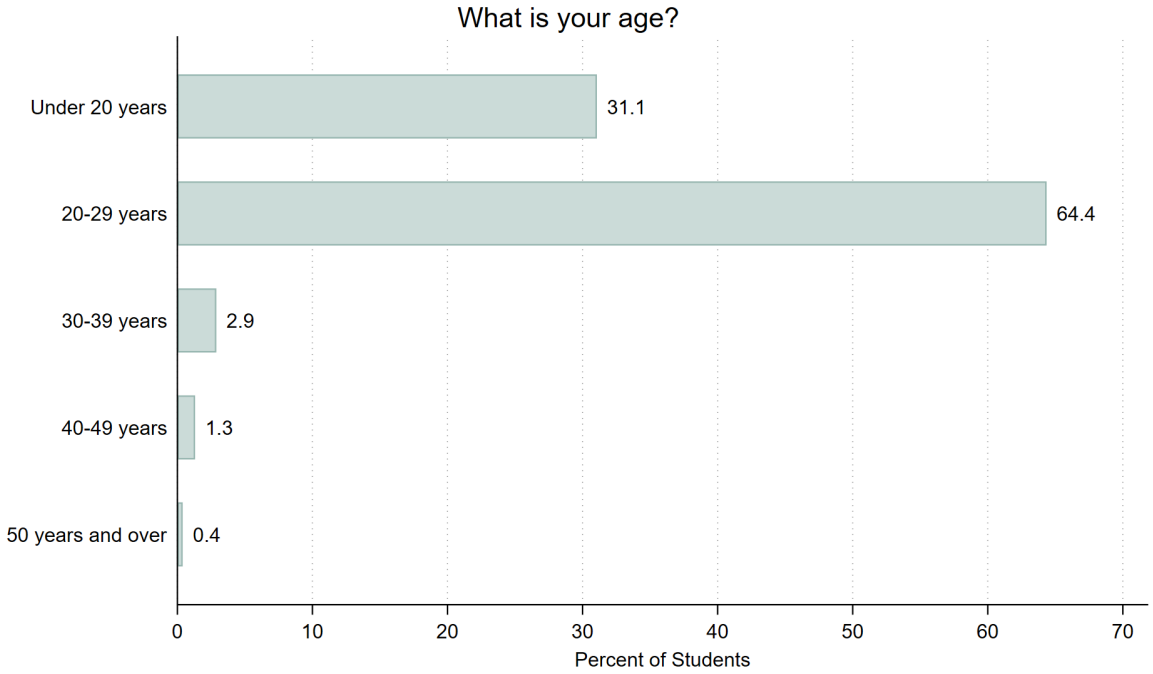


Figure 2: Age profile of the sample (n = 763).

The average age of students surveyed in 2023 is 21.5 years, indicating a younger cohort compared to previous years. Notably, the median age in the GUESSS 2021 survey was approximately 23 years. This shift suggests that the GUESSS 2023 survey captured the perspectives of a younger student population, reflecting an increased engagement of younger students in entrepreneurial activities.

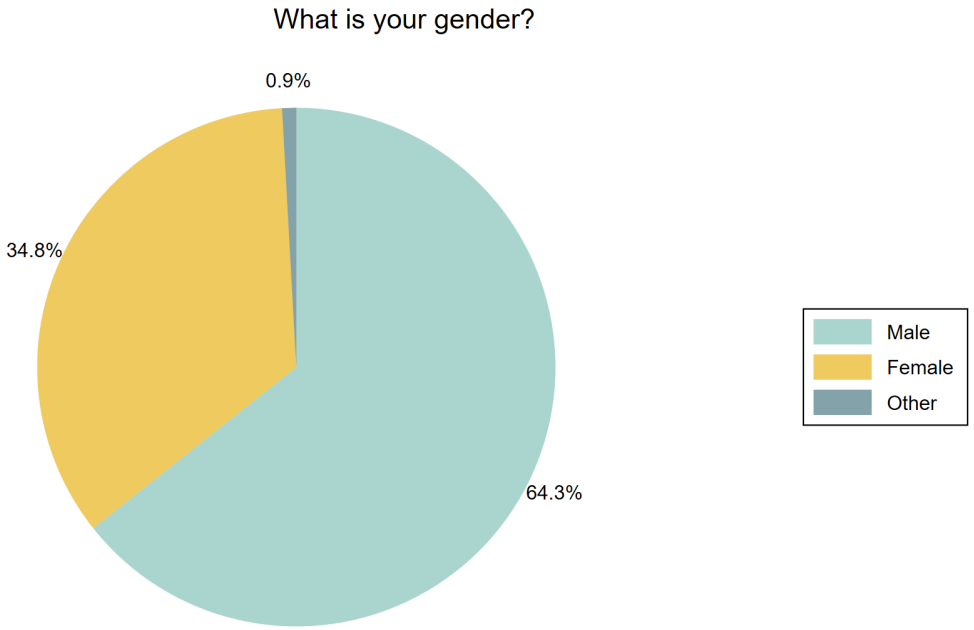


Figure 3: Gender profile of the sample (n = 799).

Figure 3 shows the gender distribution among the survey respondents. The data reveals a significant gender disparity with a significant majority of male students at 64.3%. Female students represent 34.8% of the sample. A very small percentage, 0.9%, identifies as 'Other.' This gender disparity suggests that male students are more prominently represented in the sample. Moreover, it represents a significant shift from the GUESSS 2021 survey, where the gender distribution was more balanced at 50.9% male and 48.1% female.

Regarding the nationality of the respondents, the 2023 survey shows that 70.4% of respondents identified as Dutch, while 29.6% were international students from various countries such as Germany, Romania, and China. This marks a slight increase in the proportion of Dutch students compared to the 2021 survey, where 66.2% were Dutch. The considerable proportion of international students underscores the diversity within Dutch higher education institutions.

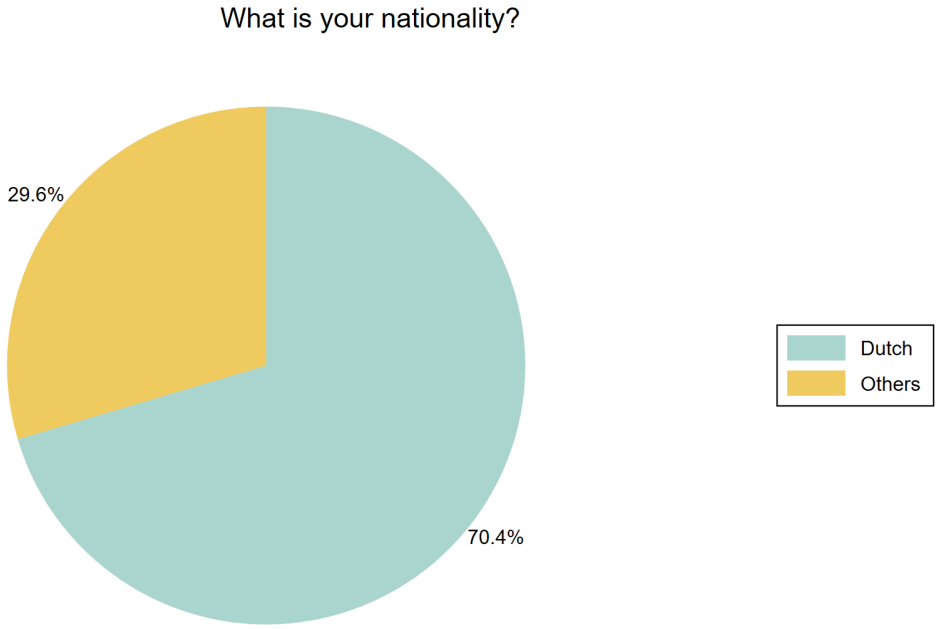


Figure 4: Nationality profile of the sample (n = 750).

Examining the entrepreneurial background of students' parents, Figure 5 reveals that 60.3% of respondents do not have parents who are self-employed or majority owners of a business. For those with entrepreneurial parents, 21.5% have self-employed fathers, 11.8% have both parents involved in entrepreneurship, and 6.4% have mothers who are entrepreneurs. This suggests that a substantial portion of students (39.7%) come from entrepreneurial family backgrounds.

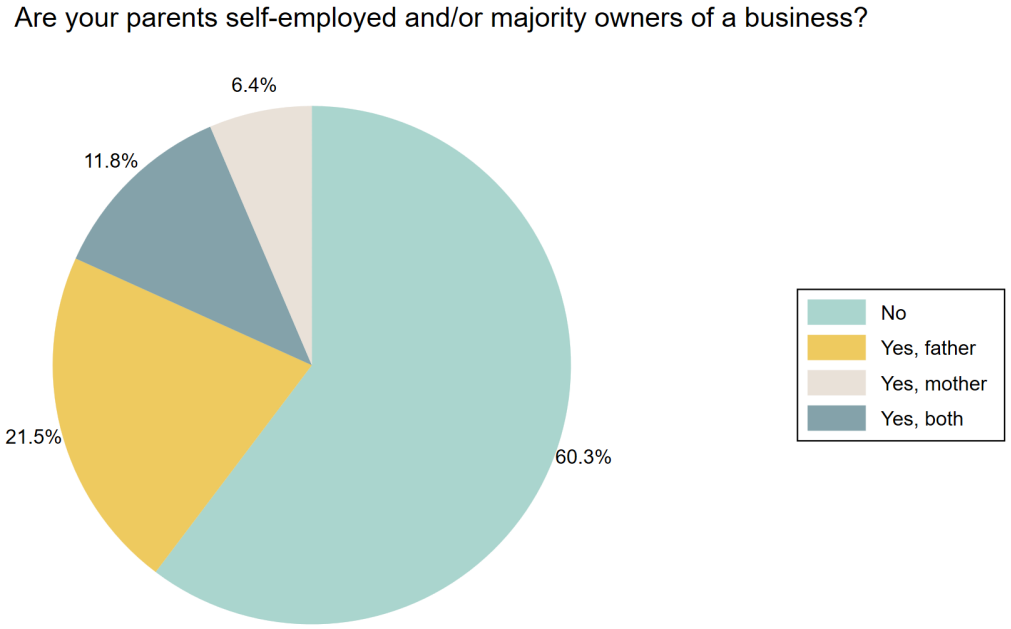


Figure 5: Self-employed parents (n = 811).

1.3. Study program characteristics

The fields of study among the respondents are varied (see Figure 6), with a notable concentration in Business/Management, which accounts for 49.8% of the students. Economics follows with 27.5%, indicating a strong inclination towards business and economic disciplines. Other fields include Natural Sciences (5.8%), Engineering (4.3%), and Social Sciences (2.9%). Fields like Arts/Humanities, Computer Sciences, Human Medicine, and others have lower representation. This distribution suggests that business-related fields are the most popular among the students surveyed, which could correlate with higher entrepreneurial interest in these disciplines (Kolvereid & Moen, 1997).

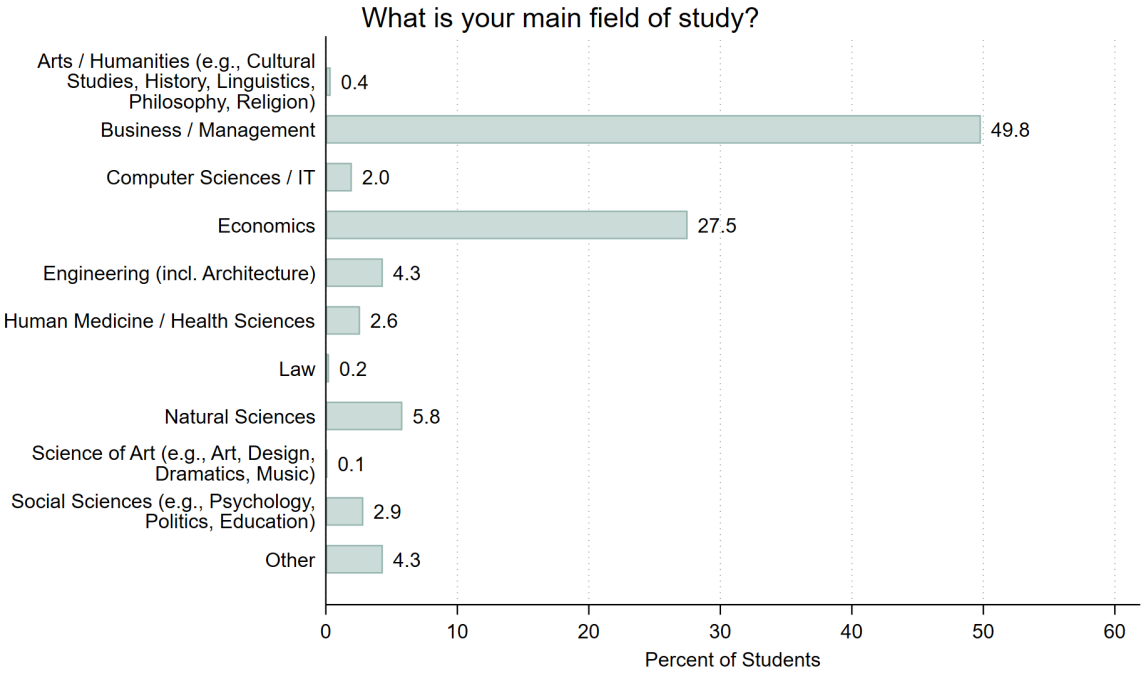


Figure 6: Main field of study (n = 807).

Figure 7 shows that the majority of respondents are undergraduate (Bachelor level) students, making up 78.5% of the sample. Graduate (Master level) students account for 20.3%, while those studying at other levels, such as MBA programs, represent 1.2%. A notable shift in the educational level of respondents is evident when compared to the GUESSS 2021 survey, where 46.1% were undergraduates. Meanwhile, the proportion of graduate students has decreased significantly, from 47% in 2021 to 20.3% in 2023.

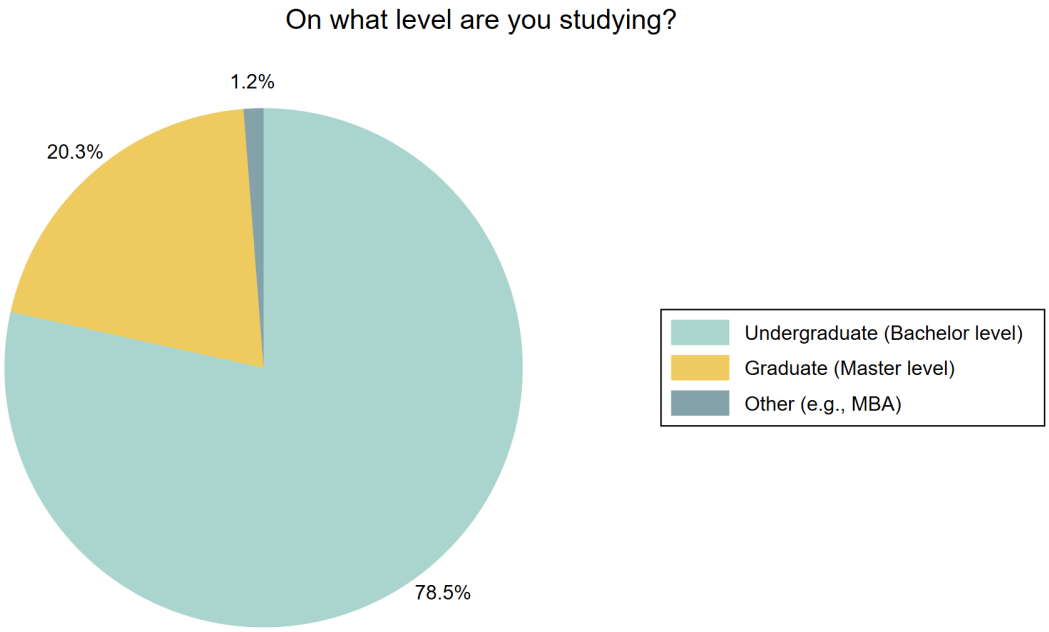


Figure 7: Level of education (n = 808).

2. Career choice intentions and entrepreneurial intentions in the university context

2.1. Current and future career choices and entrepreneurial intentions

The aggregated data on students' career intentions reveals notable shifts in their aspirations from immediately after graduation to five years later (see Figure 8). Initially, half of the students (50.8%) plan to become employees, but this number decreases to 36.3% after five years, indicating a move away from traditional employment paths. In contrast, the intention to become founders and work in their own businesses increases significantly, from 22.8% immediately after graduation to 39.8% five years later. This upward trend in entrepreneurial intentions is even more pronounced than in the GUESSS 2021 survey, where approximately 33% of students expressed the desire to pursue entrepreneurship five years post-graduation. The data suggests that students are gaining more confidence, experience, and resources to start their ventures over time (Douglas & Shepherd, 2002). The proportion of students planning to become successors in a business also shows a slight increase, from 4.3% initially to 5.5% after five years. Additionally, a significant proportion of students (22.1%) are uncertain about their career paths immediately after graduation. This uncertainty decreases to 18.4% after five years, suggesting that students develop clearer career objectives as they progress in their professional journeys.

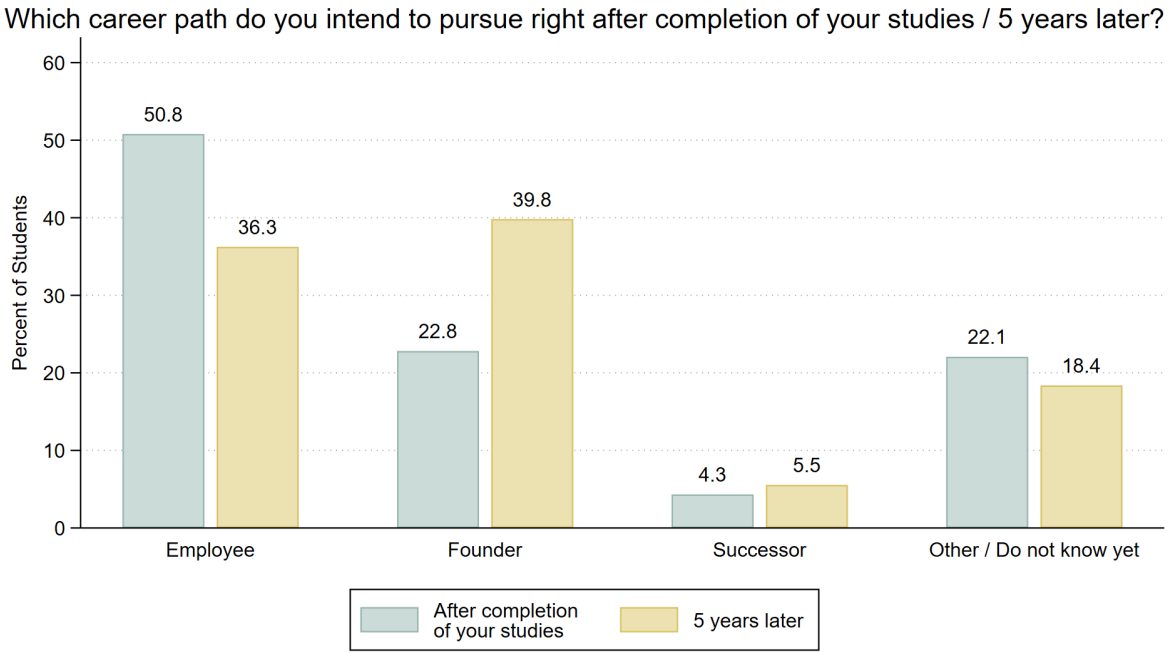


Figure 8: Career choice intentions (aggregated) after completion of studies / 5 years later (n = 811).

Figure 9 provides a more detailed view of students' career paths. Immediately after graduation, 9.7% of students intend to work in small businesses (1-49 employees), which decreases to 3.8% after five years. Similarly, the intention to work in medium-sized businesses (50-249 employees) decreases slightly from 17.1% to 11.0%, and in large businesses (250 or more employees) it also decreases from 17.8% to 14.5%. This reflects a growing preference for entrepreneurial activities over traditional employment in larger firms. Interest in non-profit organizations remains low but slightly increases from 1.8% to 2.1%, while academic career aspirations remain constant at 1.6%. The intention to work in public service sees a small rise

from 2.7% to 3.2%. Notably, entrepreneurial intentions experience the most significant increase, with 22.8% of students planning to become founders immediately after graduation, escalating to 39.8% five years later. This underscores a strong entrepreneurial drive among Dutch students. The intention to be successors in family businesses slightly decreases from 3.2% to 2.8%, while successors in other businesses see an increase from 1.1% to 2.7%.

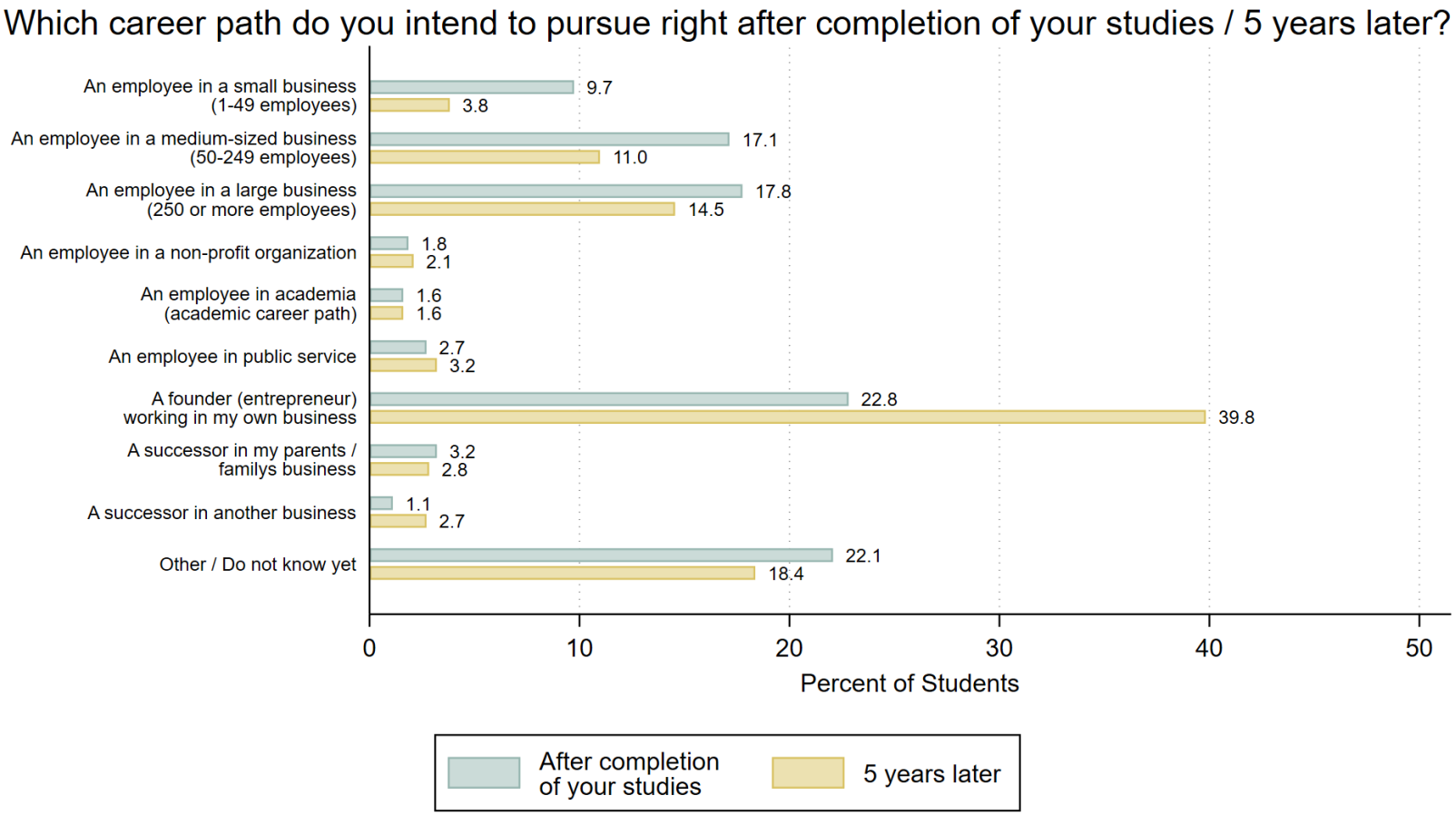
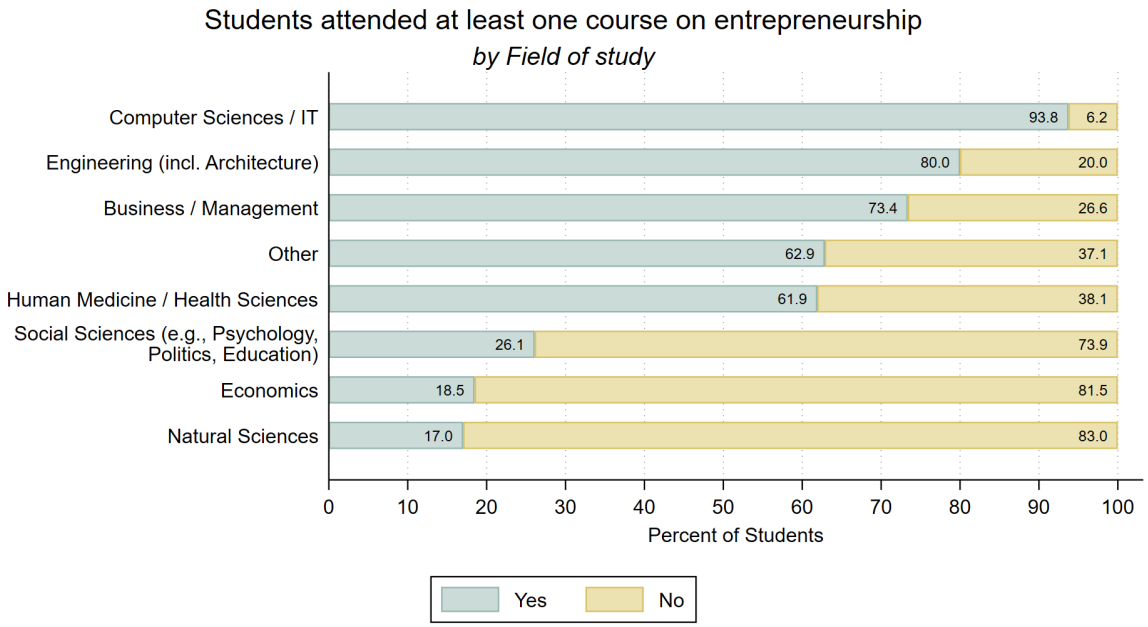


Figure 9: Career choice intentions (detailed) after completion of studies / 5 years later (n = 811).

2.2. Participation in entrepreneurship courses

Entrepreneurship education plays an important role in fostering entrepreneurial intentions and capabilities among students. Recent research highlights that exposure to entrepreneurship courses can significantly influence students' propensity to engage in entrepreneurial activities. Nabi et al. (2017) emphasize that entrepreneurship education positively impacts students' entrepreneurial intentions, attitudes, and perceived behavioral control. Additionally, Rauch and Hulsink (2015) argue that entrepreneurship education enhances students' entrepreneurial self-efficacy and skills, thereby increasing their likelihood of starting their own businesses. The educational impact is particularly pronounced in fields that integrate both practical and theoretical components of entrepreneurship into their curricula. Moreover, Walter and Block (2016) suggest that entrepreneurship education can foster a supportive entrepreneurial ecosystem within universities, further promoting entrepreneurial activities among students.

From the Dutch GUESSS 2023 survey data, it can be observed that a substantial share of 54.5% of the students in the sample attended at least one course on entrepreneurship (25.5% in the GUESSS 2021 survey). Moreover, a gender disparity is evident, with 59.7% of male students and 45% of female students having taken an entrepreneurship course. This indicates a higher engagement level among male students in entrepreneurship education. Furthermore, entrepreneurship education appears to be linked with entrepreneurial intentions. Among students who intend to start their own business directly after graduation, 66.5% have attended at least one entrepreneurship course. Similarly, 63.8% of those who plan to start their own business five years after graduation have participated in such courses during their studies. These findings underscore the importance of entrepreneurship education in shaping students' entrepreneurial aspirations (Martin et al., 2013).



Note: Only response categories with ten or more observations are included.

Figure 10: Participation in entrepreneurship courses (n = 807).

As shown in Figure 10, participation in entrepreneurship courses varies significantly across different fields of study. Notably, students in Computer Sciences/IT exhibit the highest participation rate at 93.8%, indicating a relatively strong integration of entrepreneurship education within this technical field. Engineering students also show substantial engagement, with 80% having attended at least one entrepreneurship course. Business/Management students maintain a high participation rate of 73.4%, reflecting the natural alignment of entrepreneurship education with their field of study. Students in "Other" fields (62.9%) and Human Medicine/Health Sciences (61.9%) display moderate participation rates. In contrast, fields such as Social Sciences (26.1%), Economics (18.5%) and Natural Sciences (17.0%) have the lowest participation rates in entrepreneurship courses. These variations suggest that students in more technical and business-oriented fields are more likely to engage in entrepreneurship education, potentially due to the direct applicability of entrepreneurial skills in their future careers. The lower participation rates in fields like Economics and Natural Sciences may reflect a lesser emphasis on entrepreneurship within their academic curricula or a perceived lower relevance of entrepreneurial skills to their career paths.

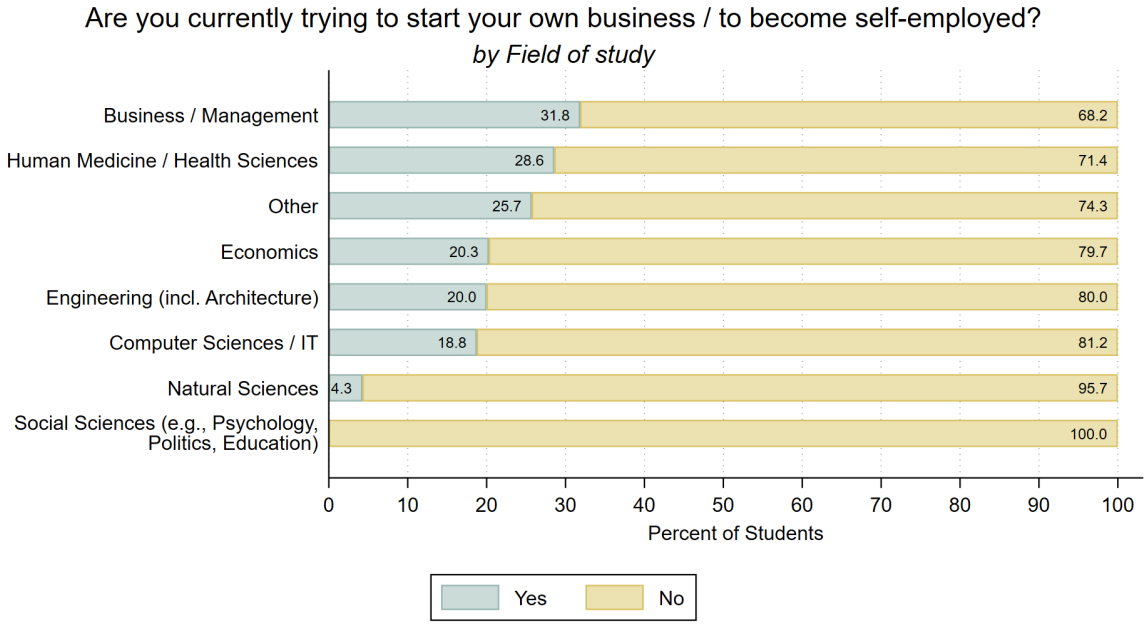
3. Students' entrepreneurial activities in planning and action

The GUESSS survey examines the entrepreneurial activities of Dutch students, distinguishing between two types of entrepreneurs: nascent entrepreneurs and active entrepreneurs. Nascent entrepreneurship refers to individuals in the process of starting a new business but who have not yet started any revenue-generating activities. This stage is critical as it involves idea generation, business planning, and initial resource acquisition, laying the foundation for future business success. (Reynolds et al., 2004; Davidsson & Gordon, 2016).

Overall, 25.2% of the students in the sample declare themselves to be nascent entrepreneurs (21% in the GUESSS 2021 survey). This indicates a significant entrepreneurial interest and activity among the Dutch student population. The following sections aim to characterize the group of nascent student entrepreneurs regarding their field of study, gender, and parental background.

3.1. Nascent student entrepreneurs by demographic characteristics

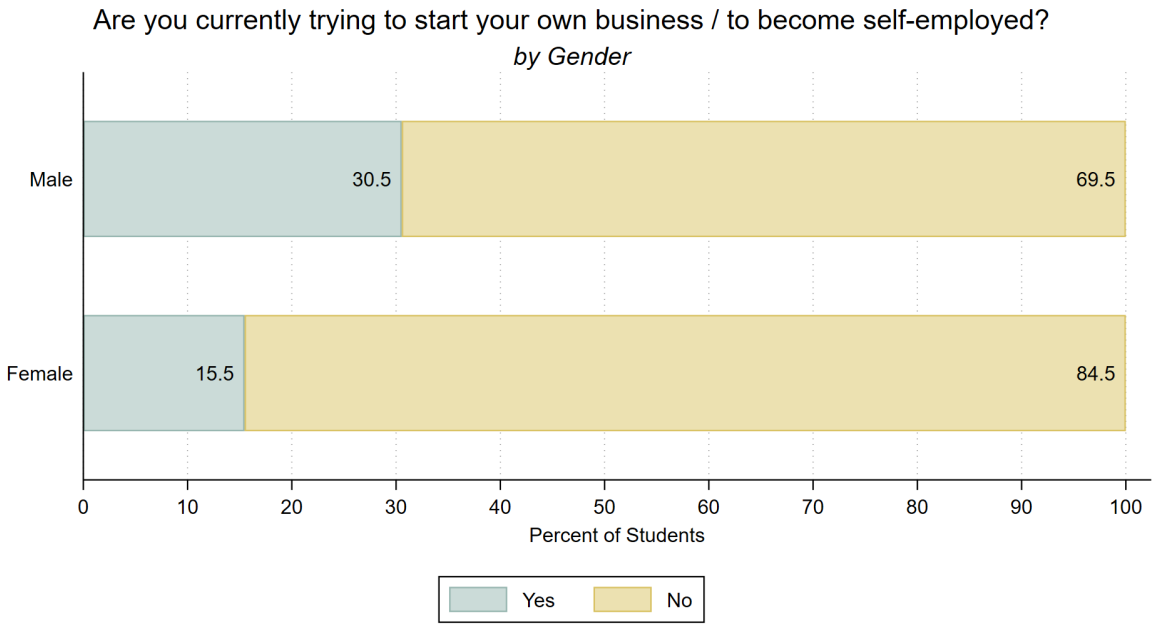
As Figure 11 shows, the level of nascent entrepreneurship varies significantly by the field of study. Students in Business/Management, Human Medicine/Health Sciences and “Other” fields show the highest share of respondents currently trying to start a business, with 31.8%, 28.6% and 25.7% of the respondents, respectively. These shares are also above the sample average of 25.2%. Economics follows at 20.3%, Engineering at 20.0%, and Computer Sciences/IT at 18.8%. Conversely, fields like Natural Sciences (4.3%) and Social Sciences (0.0%) have the lowest rate of nascent student entrepreneurs. This variation suggests differing levels of entrepreneurial drive and opportunities perceived across different academic disciplines (Kolvereid & Moen, 1997).



Note: Only response categories with ten or more observations are included.

Figure 11: Nascent student entrepreneurs by field of study (n = 807).

Figure 12 shows the gender composition of the nascent student entrepreneurs in the sample. Among male students, 30.5% are currently trying to start their own business or become self-employed, compared to only 15.5% of female students. This significant disparity indicates that male students in the Netherlands seem more inclined to follow an entrepreneurial career path than female students.



Note: Only response categories with ten or more observations are included.

Figure 12: Nascent student entrepreneurs by gender (n = 799).

Figure 13 breaks down the likelihood of being a nascent student entrepreneur by the entrepreneurial background of their parents. The group of students whose fathers are self-employed shows the highest level of nascent entrepreneurship: 28.7% of the respondents in this group indicate they are currently trying to start a business or become self-employed. This is followed by the group where both parents are self-employed, with a share of nascent student entrepreneurs of 25.0%. Finally, students without self-employed parents (24.3%) and those with self-employed mothers (21.2%) are the least likely to engage in starting their own business. The GUESSS 2021 report also explored the influence of parental entrepreneurship, noting that respondents with self-employed parents were about 40% more likely to start their venture. Accordingly, entrepreneurial role models, particularly self-employed fathers, positively impact students' inclination to become entrepreneurs themselves (Van Auken et al., 2006).

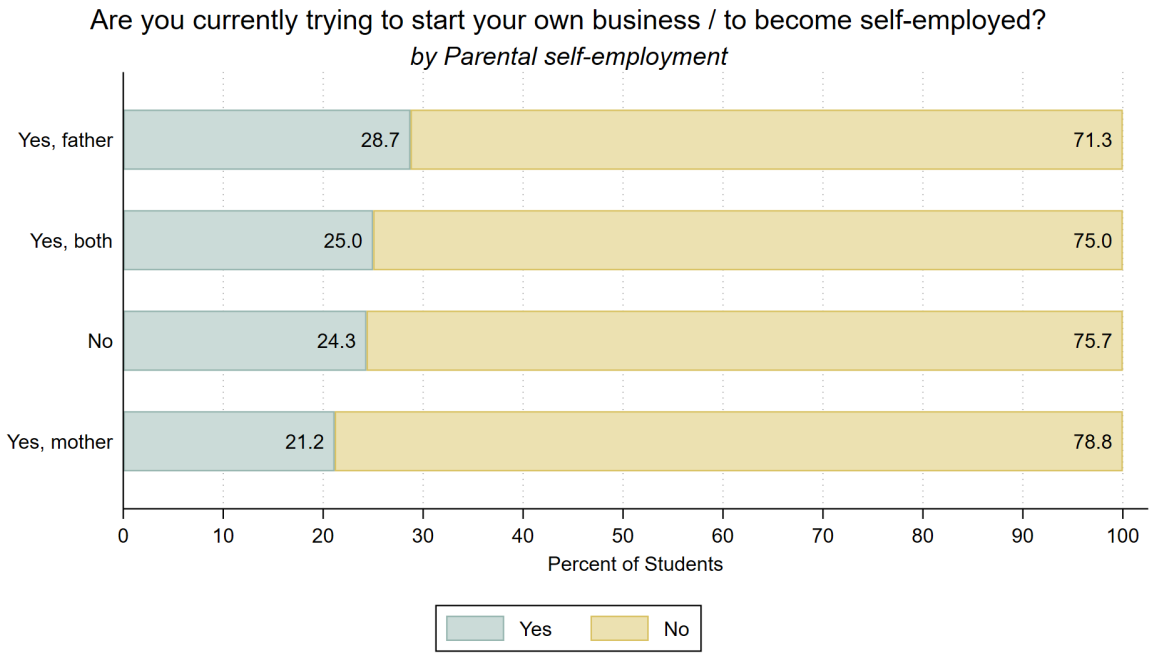


Figure 13: Nascent student entrepreneurs by parental self-employment (n = 811).

3.2. Nascent student entrepreneurs by characteristics of their intended business

Most nascent student entrepreneurs (52.9%) attempt to start their businesses with co-founders. As detailed in Figure 14, 34.3% of the students intend to start with one co-founder, while 10.8% aim to have two co-founders. 7.8% of the nascent entrepreneurs in the sample plan to start their businesses with three or more co-founders. This distribution highlights the collaborative nature of student entrepreneurship in the Netherlands, with many students seeking partners to support their entrepreneurial ventures.

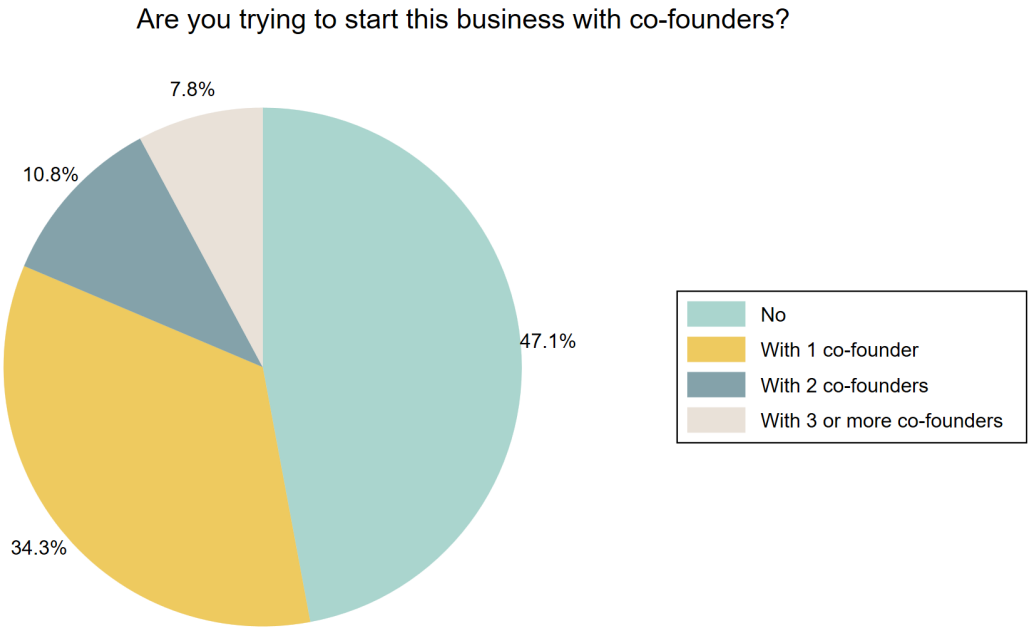


Figure 14: Nascent student entrepreneurs by number of co-founders (n = 102).

Over half (54.9%) of the nascent entrepreneurs want their business to become their main occupation after graduation (see Figure 15). A smaller group, 16.7%, do not see their business as their primary future career direction, while 28.4% are unsure. This indicates a strong commitment among the majority of Dutch student entrepreneurs to pursue their business endeavors full-time post-graduation, even though a notable portion remains uncertain about their future career plans.

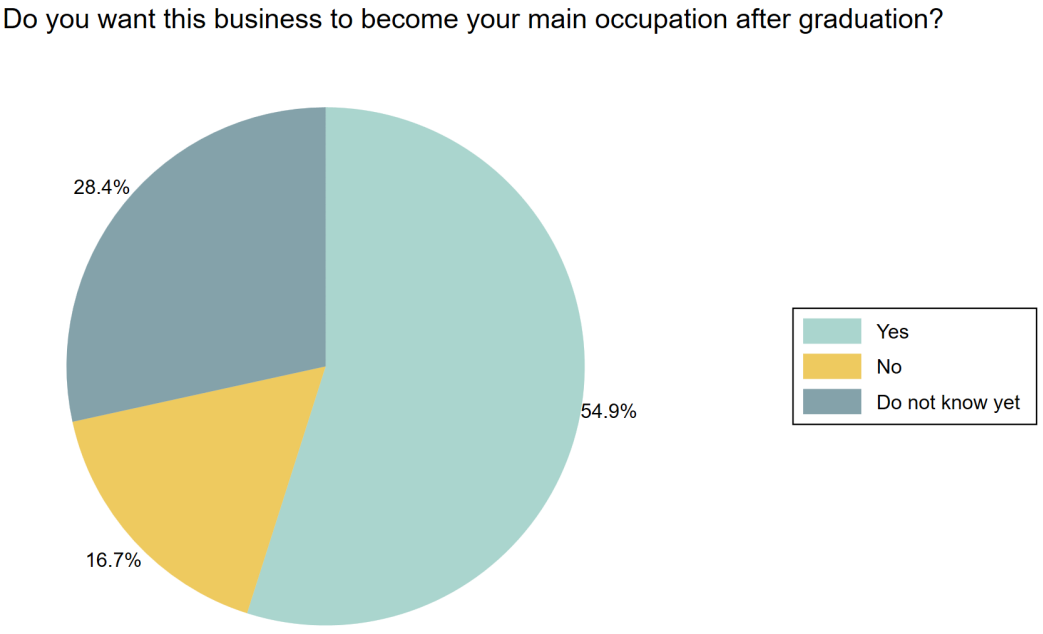
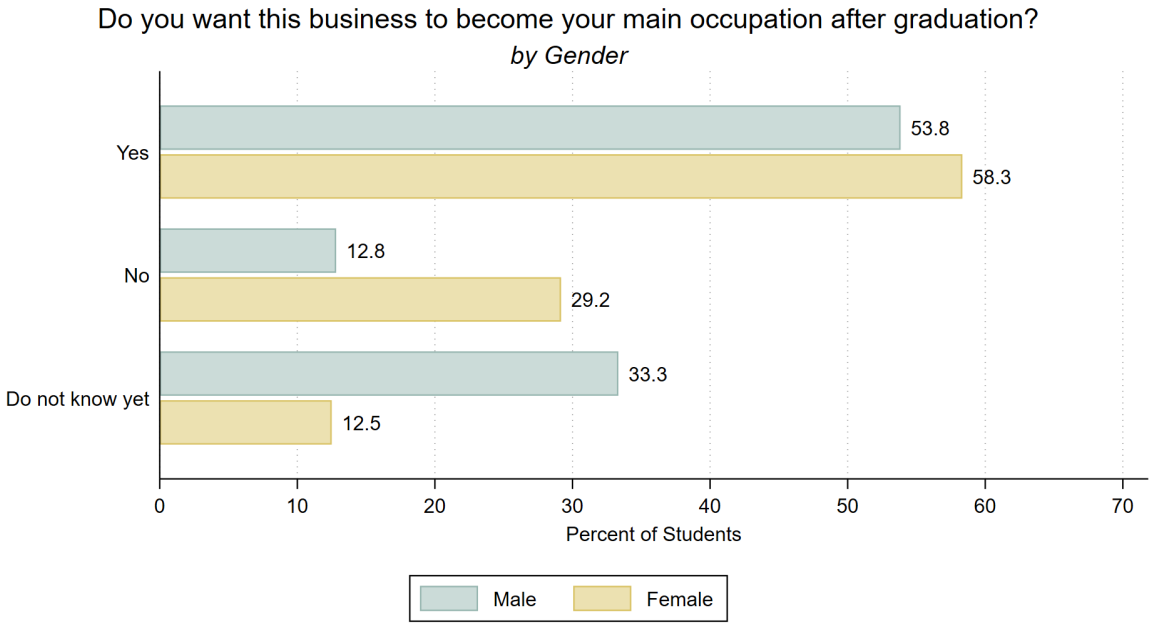


Figure 15: Career aspirations of nascent student entrepreneurs (n = 102).

Figure 16 reveals a gender difference in students' desire to pursue their nascent business as their main occupation post-graduation. Among male students, 53.8% wish to make their business their primary career focus, compared to an even larger share of 58.3% of female students. Additionally, 29.2% of female students, but only 12.8% of male students, do not plan to prioritize their business as their main future occupation. Those unsure are 33.3% among males and 12.5% among females. Interestingly, this indicates a higher uncertainty among male nascent entrepreneurs about their future plans.



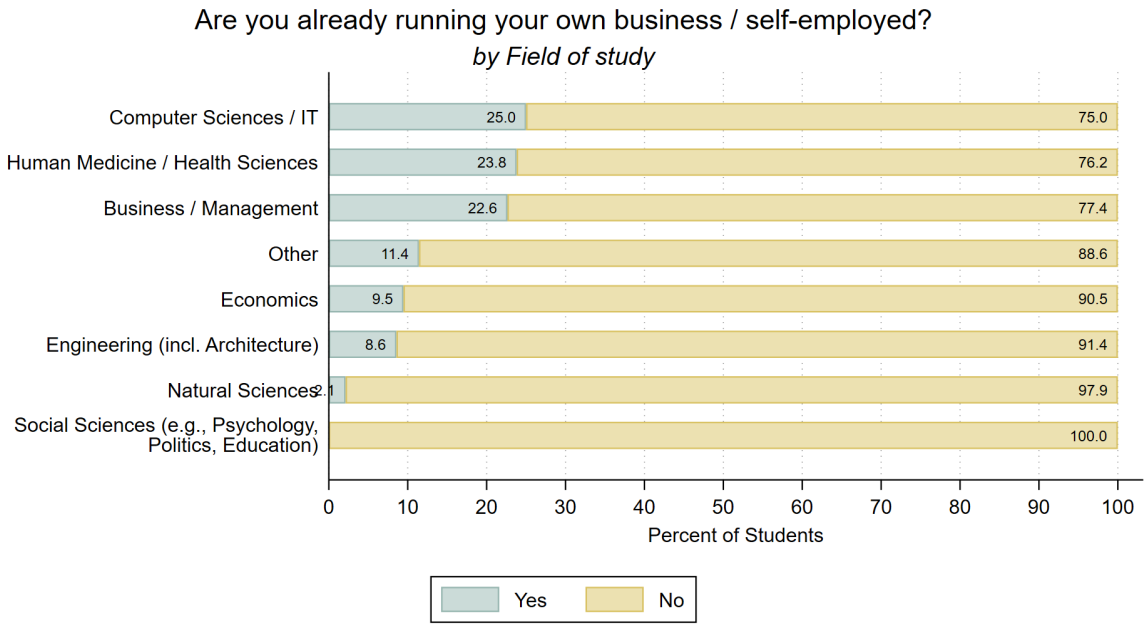
Note: Only response categories with ten or more observations are included.

Figure 16: Career aspirations of nascent student entrepreneurs by gender (n = 102).

3.3. Active student entrepreneurs by demographic characteristics

The second type of entrepreneurs in the GUESSS survey, active entrepreneurs, are considered to be students already running their own businesses or being self-employed. Following this definition, 16.3% of the respondents in the Dutch survey are active entrepreneurs. This represents a significant increase from 2021, when about 10.3% of students identified as active entrepreneurs, highlighting a growing trend of students engaging in entrepreneurial activities during their studies. The next sections provide more details about this group of students, including their field of study, gender, and parental background.

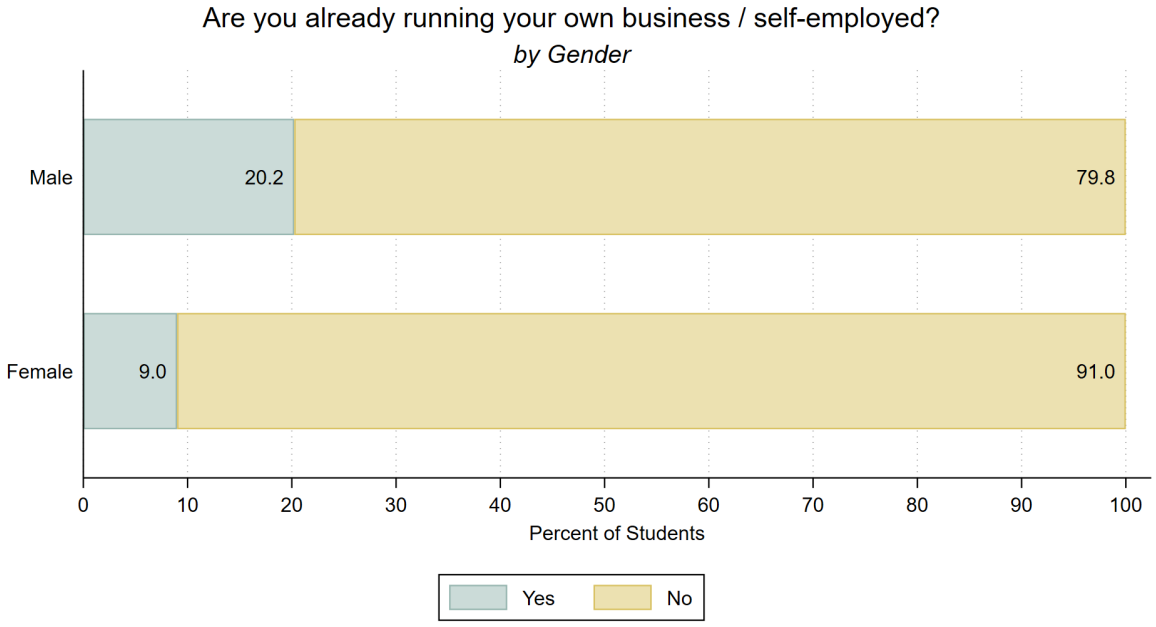
Regarding students' field of study (see Figure 17), Computer Sciences/IT has the highest rate of active entrepreneurship at 25.0%, followed by Human Medicine/Health Sciences (23.8%) and Business/Management (22.6%). Fields like Economics (9.5%) and Engineering (8.6%) have lower rates of active entrepreneurship. Social Sciences show the lowest rate at 2.1%. This indicates a stronger entrepreneurial activity among students in technical and health-related fields.



Note: Only response categories with ten or more observations are included.

Figure 17: Active student entrepreneurs by field of study (n = 807).

Similar to nascent entrepreneurship, a gender gap is also evident in active student entrepreneurship. As Figure 18 shows, among male students, 20.2% are already running their own businesses or are self-employed, compared to 9.0% of female students.



Note: Only response categories with ten or more observations are included.

Figure 18: Active student entrepreneurs by gender (n = 799).

Figure 19 provides the distribution of entrepreneurially active students across the different types of parental self-employment. Students with self-employed mothers have the lowest active entrepreneurship rate at 11.5%, while those with no self-employed parents are at 16.8%. Students with self-employed fathers and with both parents being self-employed show active entrepreneurship rates of 16.1% and 16.7%, respectively. This suggests that while parental self-employment influences student entrepreneurship, it has a more varied impact on actual entrepreneurial activities (Zellweger et al., 2011).

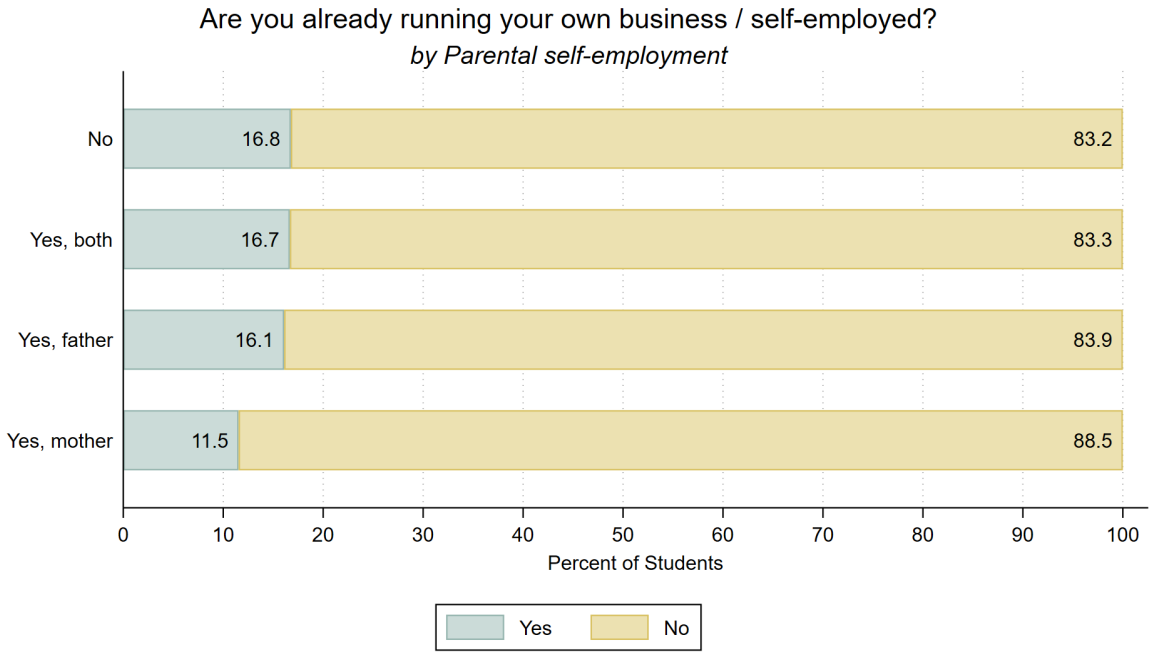


Figure 19: Active student entrepreneurs by parental self-employment (n = 811).

3.4. Active student entrepreneurs by characteristics of their running business

The majority of student entrepreneurs do not have employees (see Figure 20). Specifically, 42.4% report having no employees, 22.9% have one employee, 10.2% have two employees, 5.9% have three employees, and 18.6% have four or more employees. This distribution indicates that many student businesses are in the early stages, often operating as solo ventures or with minimal staffing.

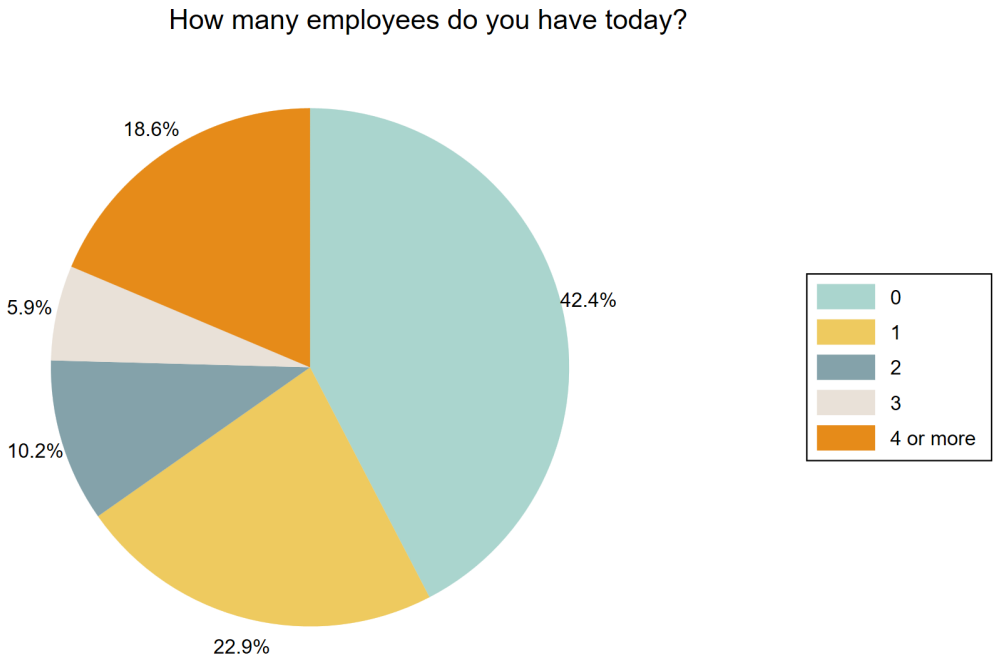
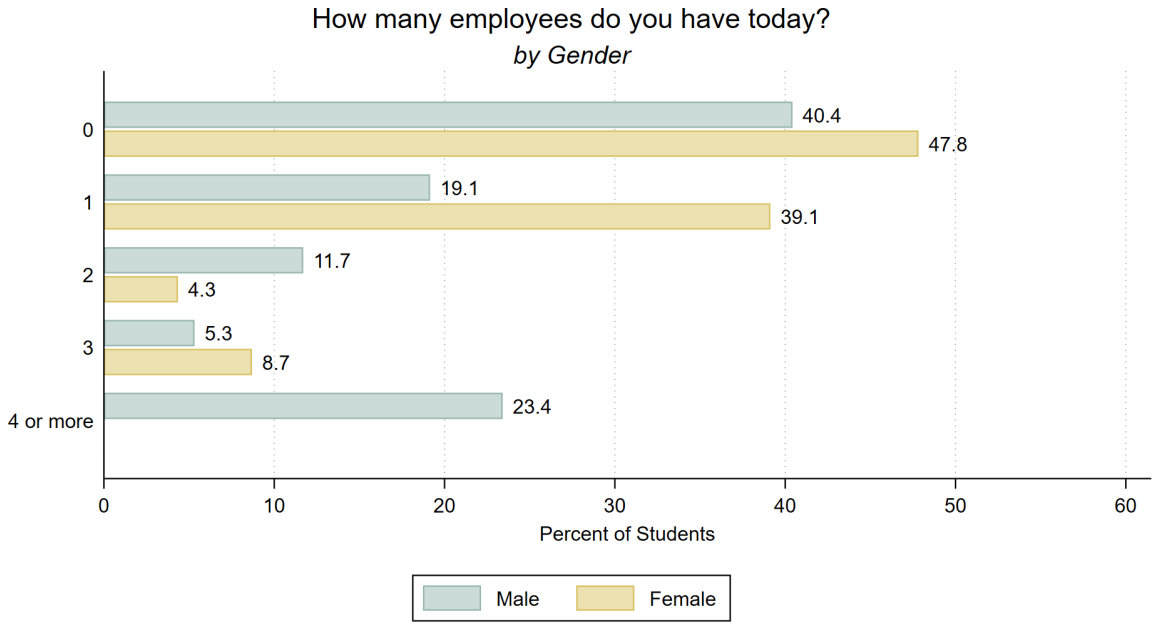


Figure 20: Active student entrepreneurs by number of employees (n = 118).

Figure 21 reveals that the number of employees in student-run businesses varies significantly by gender. Among male entrepreneurs, 40.4% have no employees, while a higher percentage of female entrepreneurs, 47.8%, fall into this category. Moreover, female entrepreneurs are more likely for businesses with just one employee, with 39.1% compared to 19.1% of male entrepreneurs. When it comes to having two employees, 11.7% of male entrepreneurs and 4.3% of female entrepreneurs are in this group. For businesses with three employees, 5.3% of male entrepreneurs and 8.7% of female entrepreneurs are represented. Notably, male entrepreneurs tend to have larger teams, with 23.4% having four or more employees, whereas no female entrepreneurs have a team of four or more.



Note: Only response categories with ten or more observations are included.

Figure 21: Active student entrepreneurs by number of employees and gender (n = 117).

Figure 22 shows the distribution of active student entrepreneurs regarding their business as their main occupation after they graduated. 28.7% of the respondents wish for their entrepreneurial endeavors to become their primary career focus post-graduation. Conversely, 37.2% of active student entrepreneurs do not plan to continue with their business as their main career path. Lastly, 34.1% of active entrepreneurs remain unsure, reflecting uncertainty about their future career paths. This distribution highlights that while a notable portion of active student entrepreneurs are committed to their business, over two-thirds are undecided or do not intend to pursue it full-time.

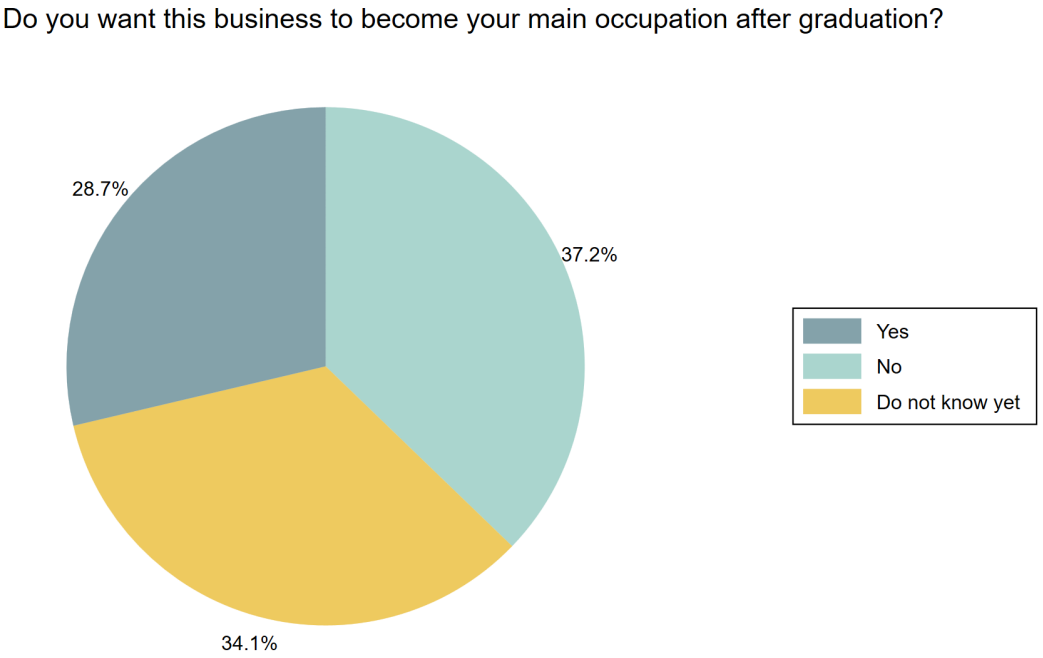
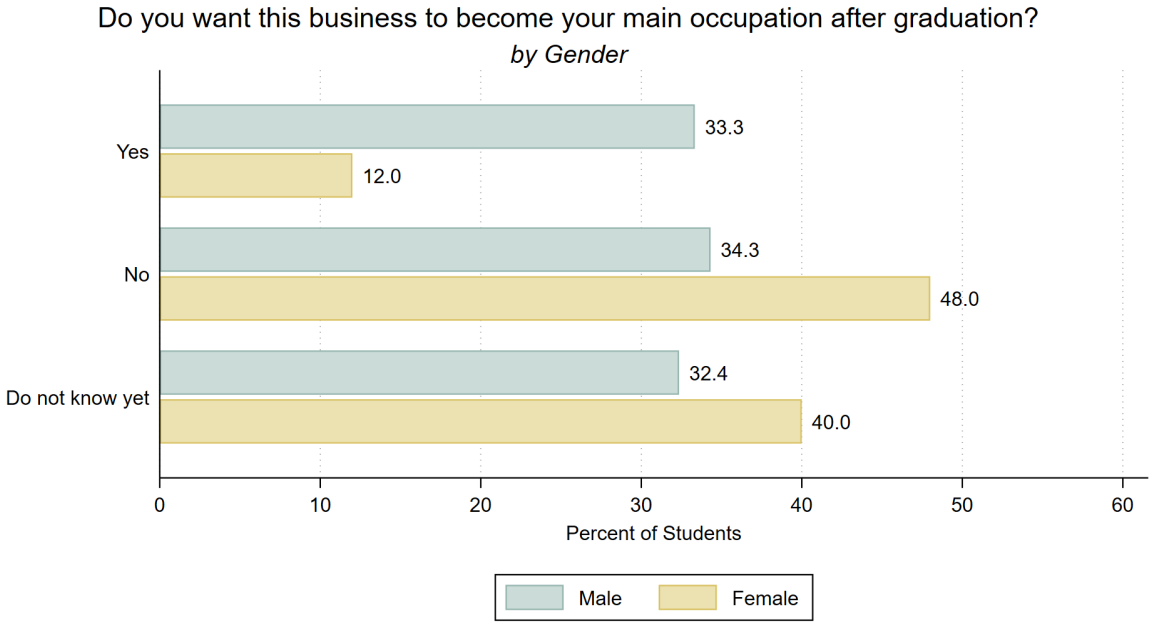


Figure 22: Career aspirations of active student entrepreneurs (n = 129).

The data further reveals gender differences in the aspirations of active student entrepreneurs to make their business their main occupation after graduation (see Figure 23). Among male students, 33.3% wish for their business to become their main occupation, compared to only 12.0% of female students. The percentage of male students who do not want their business to be their main career path is 34.3%, while for female students it is higher, at 48.0%. A larger proportion of female students (40.0%) are uncertain compared to male students (32.4%). This indicates that male students are more inclined towards continuing their business as a primary career, while female students seem to show higher levels of uncertainty and inclination towards other career paths.



Note: Only response categories with ten or more observations are included.

Figure 23: Career aspirations of active student entrepreneurs by gender (n = 128).

Figure 24 presents differences in active student entrepreneurs' future career aspirations across the different types of parental self-employment. Students with self-employed mothers are most inclined to make their business their main occupation after they graduated (33.3%) but also show the highest level of uncertainty (50.0%). Those with no self-employed parents are more balanced, with 30.0% wanting to continue their business full-time, 37.5% aspiring a different career path, and 32.5% uncertain. Of the students with both parents self-employed a relatively small share sees their business as their primary future career direction (26.7%), while the majority has different career plans (53.3%), suggesting a tendency to refrain from following their parents' career path. Moreover, students with self-employed fathers are the least likely to state that they plan with their current business as their future occupation (25.0%), while 32.1% do not and 42.9% are uncertain.

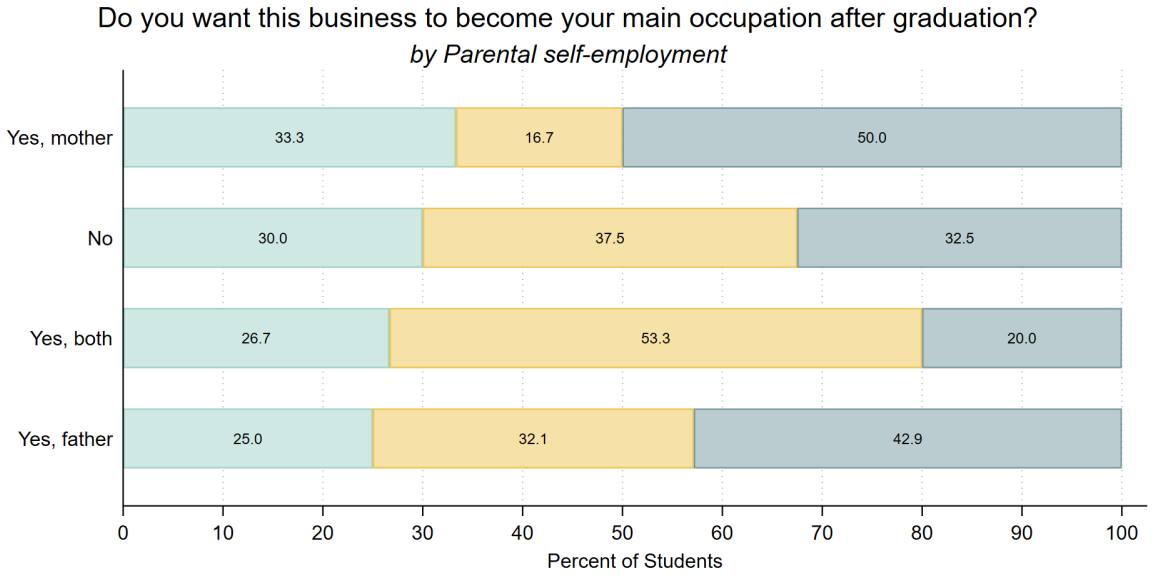


Figure 24: Career aspirations of active student entrepreneurs by parental self-employment (n = 129).

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